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09/871,484	05/31/2001	Hovhannes Ghukasyan	HPLA.003US0	8746

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EXAMINER

LE, MIRANDA

ART UNIT PAPER NUMBER

2177

DATE MAILED: 02/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/871,484

Applicant(s)

GHUKASYAN, HOVHANNES

Examiner

Miranda Le

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. (US Patent No. 6,052,687), in view of Lindsay et al. (US Patent No. 6,105,020).

**As per claim 1**, Lindsay teaches “ method for automatic generation of join graphs for relational database queries (Figs. 2, 6, col. 5, line 63 to col. 6, line 8), comprising: (a) receiving an input list of tables including attributes of interest for a database query” at col. 5, line 63 to col. 6, line 8;

“(e) generating a join graph corresponding to said input list of tables from said marked instances in said hierarchical representation” Figs. 2, 6, col. 5, line 63 to col. 6, line 67, col. 7, lines 1-14.

Lindsay does not specifically teach the following limitations. However, Miura teaches:

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“(b) marking instances of tables of said input list having single occurrences in an hierarchical representation of a database schema, and marking ancestors of said instances of tables according to said hierarchical representation” at col. 7, lines 48-65;

“(c) marking unmarked instances of multidimensional tables of said input list closest to marked instances, marking unmarked ancestors of said unmarked instances of said multi-dimensional tables according to said hierarchical representation, and marking unmarked instances of one-dimensional tables that reference said multidimensional tables and have said unmarked instances of said multi-dimensional tables as parents according to said hierarchical representation” at col. 7, lines 48-67, col. 8, lines 1-67, col. 9, lines 1-44, Figs. 7, 10, 12;

“(d) marking unmarked instances of one-dimensional tables of said list of tables closest to marked instances, and marking unmarked ancestors of said unmarked instances of said one-dimensional tables according to said hierarchical representation” at col. 7, line 48 to col. 8, line 11.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Lindsay with the teachings of Miura to include steps (b), (c), (d) in order to provide a relational database search system capable of obtaining a desired retrieval result even when a user does not fully understand the table structure and the filed information in the relational database.

**As per claim 2**, Lindsay teaches “(b) selecting a table of said input list” at col. 7, lines 5-46, Fig. 4.

Lindsay does not explicitly teach the following limitations. Miura teaches:

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“(b2) determining whether a number of instances of said table in an hierarchical representation of a database schema is greater than one” at col. 8, lines 30-56, Fig. 7;

“(b3) if said number of instances of said table is not greater than one, then marking an instance of said table in said hierarchical representation and all unmarked instances of ancestor tables to said table according to said hierarchical representation” at col. 8, lines 30-56, Fig. 7;

“(b4) repeating (b1) to (b3) until a last table in said input list is processed” at col. 8, lines 12-56, col. 9, lines 1-44, Fig. 7.

**As per claim 3**, Miura teaches “(b5) selecting a table having a table name from said input list” at col. 6, lines 30-67, Fig. 5;

“(b6) determining whether a number of dimensions of said table is greater than one according to a database schema” at col. 7, line 41 to col. 8, line 67;

“(b7) if said number of dimensions of said table is greater than one, then adding said table name to a multidimensional list of table, and if said number of dimensions of said table is not greater than one, then adding said table name to a one-dimensional list of tables” at col. 7, line 41 to col. 8, line 67, col. 9, lines 1-65, Fig. 7;

“(b8) repeating (b5) to (b7) until a last table in said input list is processed” at col. 7, line 41 to col. 8, line 11, Fig. 7.

**As per claim 4**, Miura teaches “(b1) selecting a table having a table name from said input list” at col. 6, lines 30-67, Fig. 5;

“(b2) determining whether a number of instances of said table in an hierarchical representation of a database schema is one” at col. 7, line 41 to col. 8, line 67;

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“(b3) if said number of instances of said table is one, then marking an instance of said table in said hierarchical representation and all unmarked instances of ancestor tables to said table according to said hierarchical representation” at col. 7, line 41 to col. 8, line 67;

“(b4) if said number of instances of said table is greater than one, then determining whether a number of dimensions of said table is greater than one according to a database schema” at col. 7, line 41 to col. 8, line 67, col. 9, lines 1-65, Fig. 12;

“(b5) if said number of dimensions of said table is greater than one, then adding said table name to a multidimensional list of tables, and if said number of dimensions of said table is not greater than one, then adding said table name to a one-dimensional list of tables” at col. 7, line 41 to col. 8, line 67, col. 9, lines 1-65;

“(b6) repeating (b1) to (b5) for all tables in said input list” at col. 7, line 41 to col. 8, line 67, col. 9, line 1 to col. 10, lines 44, Figs. 7-12.

**As per claim 5**, Miura teaches “(c1) selecting a multi-dimensional table from said multi-dimensional list” at col. 8, line 67 to col. 9, line 65;

“(c2) if an instance of said multi-dimensional table has been marked in said hierarchical representation, then selecting another multi-dimensional table from said multi-dimensional list” at col. 8, line 67 to col. 9, line 65;

“(c3) if an instance of said multi-dimensional table has not been marked in said hierarchical representation, then finding an instance of said multidimensional table that is a closest child in relationship to a marked instance in said hierarchical representation” at col. 8, line 67 to col. 9, line 65;

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“(c4) marking said found instance of said multidimensional table and instances of all unmarked ancestors of said found instance of said multi-dimensional table according to said hierarchical representation” at col. 9, line 6 to col. 10, line 67, col. 11, lines 1-56;

“(c5) generating a dimensions list for said multidimensional table” at col. 8, lines 11-54;

“(c6) processing said dimensions list” at col. 7, lines 48-65, col. 8, lines 11-54;

“(c7) repeating (c1) to (c6) until a last table in said multi-dimensional list is processed” at col. 7, lines 48-65.

**As per claim 6**, Miura teaches “said (c5) comprises referring to a database schema to determine all reference tables to said multi-dimensional table, and including all said reference tables except a parent of said multi-dimensional table according to said hierarchical representation” at col. 8, line 67 to col. 9, line 67, col. 10, line 1 to col. 11, line 56.

**As per claim 7**, Miura teaches “(c61) selecting a reference table from said dimensions list” at col. 7, lines 48-65;

“(c62) if a table name of said reference table is not in said one-dimensional list, then selecting another reference table from said dimensions list” at col. 7, line 48 to col. 8, line 54;

“(c63) if said table name of said reference table is in said one-dimensional list, then marking an instance of said reference table in said hierarchical representation having said current multi-dimensional table as its parent” at col. 8, line 12 to col. 9, line 67, col. 10, lines 1-24;

“(c64) removing said table name from said one-dimensional list” at col. 7, line 48 to col. 8, line 54, Fig. 7;

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“(c65) repeating (c61) to (c64) until a last reference table in said dimensions list has been processed” at col. 7, lines 48-65, col. 8, lines 1-11, Fig. 7.

**As per claim 8**, Miura teaches “(d1) selecting a one-dimensional table from said one-dimensional list” at col. 8, lines 22-56, col. 9, lines 6-65;

“(d2) if an instance of said one-dimensional table has been marked in said hierarchical representation, then selecting another one-dimensional table from said one dimensional list” at col. 8, line 22 to col. 9, line 67, col. 10, lines 1-54;

“(d3) if an instance of said one-dimensional table has not been marked in said hierarchical representation, then finding an instance of said one-dimensional table that is a closest child in relationship to a marked instance in said hierarchical representation” at col. 7, lines 48-65, col. 9, lines 6-65;

“(d4) marking said found instance of said onedimensional table and instances of all unmarked ancestors of said found instance of said one-dimensional table according to said hierarchical representation” at col. 7, lines 48-65, col. 9, line 1 to col. 10, line 67, col. 11, lines 1-55;

“(d5) repeating (d1) to (d4) until a last one-dimensional table in said one-dimensional list is processed” at col. 7, lines 48-65, col. 8, lines 22-67, col. 9, line 1 to col. 10, line 54.



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### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit is (703) 872-9306. The TC 2100's Customer Service number is (703) 306-5631.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Miranda Le  
January 26, 2004



GRETA ROBINSON  
PRIMARY EXAMINER